

CLAIMS

1. What is claimed is a combination filter for removing particulate matter from engine oil, comprising a canister, a full flow filter, a bypass filter, a plurality of engine oil inlets, a full flow filter outlet, a bypass filter outlet, and an engine mounting means,

The canister roughly cylindrical, closed at one end and open at the other, the canister closed end possessing a single opening through which the bypass filter outlet passes, the canister open end possessing a plurality of engine oil inlets and an engine mounting means,

The full flow filter a cylindrical tube that fits inside the canister, an outer circumferential area existing between the outside of the full flow filter and the inside wall of the canister, the full flow filter sealed to the open end of the canister with gaskets such that oil may enter the open end of the canister and must flow into the outer circumferential area, the full flow filter made of porous

material such that oil must flow through the full flow filter from the outer circumferential area through the full flow filter into a transition space,

- the bypass filter a cylindrical tube smaller in diameter than the
- 5 full flow filter placed coaxially within the full flow filter in the transition space, the bypass filter sealed at each end of the tube such that oil may pass circumferentially from the transition space through the bypass filter into a bypass collection space, the majority of oil in the transition space exiting the transition space through a
- 10 full flow filter outlet in the open end of the canister, the full flow filter outlet opening passing through the engine mounting means,

- The bypass filter possessing a metal cap with a plurality of blades at the end of the bypass filter closest to the canister open end, the metal cap positioned such that if the bypass filter moves
- 15 towards the canister open end the metal cap will prevent the bypass filter from plugging the full flow filter outlet,

The engine mounting means a standard screw-thread connector that fits internal combustion engine oil filter mounts, the bypass collection space connected via a bypass return orifice to the bypass filter outlet, the bypass return orifice a narrow tube of metal, the bypass return orifice one (1) millimeter in width, the bypass filter outlet capable of being connected via industry-standard connectors to a hose which can be lead to any engine oil destination on a standard internal combustion engine, the oil output of the bypass filter through the bypass filter outlet a measurable amount which is a function of the amount of oil introduced at the engine oil inlets through a range of engine oil pressures from 5 pounds per square inch to 100 pounds per square inch, the oil output from the bypass filter through the bypass filter outlet never mixed with the oil from the full pass filter until the oil

from the bypass filter outlet is returned to the engine at a point other than the engine mounting means.

2. The combination filter of Claim 1, where the canister is in two pieces, an upper canister and a base canister,

5 the upper canister screwing into threads in the base canister, the base canister possessing the engine mounting means and the plurality of oil inlet ports, the upper canister possessing the bypass filter outlet,

the bypass filter capable of being removed and replaced by
10 unscrewing the upper canister from the base canister and removing the upper canister, the bypass filter then lifted out and a new bypass filter replaced, the upper canister then screwed back into the base canister,

The full flow filter capable of being cleaned by unscrewing the
15 upper canister from the base canister, then removing the bypass filter, then cleaning the full flow filter, then replacing the bypass

filter, and then screwing the upper canister back into the base canister.

3. The combination filter of Claim 1 where the bypass filter is comprised of cotton fibers and the full flow filter is comprised of
5 paper.

4. The combination filter of Claim 2 where the full flow filter is comprised of steel mesh and the bypass filter is comprised of cotton fiber